

NU-01013
Amendment dated 11/1/4

09/824,033

01300045aa
Reply to office action mailed 08/24/2004

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 6, with the following rewritten paragraph:

In a cellular communication system using a CDMA scheme, all mobile stations called by a base station effect CDMA ~~mutipath~~multipath communication by sharing the same frequency. This deteriorates ~~receipt~~reception quality due to, e. g., ~~fading~~fading, and raises the interference wave level due to distance, thereby lowering the subscriber capacity of the system. To solve this problem, high speed, closed loop, transmission power control is essential.

Please replace the paragraph beginning at page 1, line 13, with the following rewritten paragraph:

Transmission power control executed by a conventional CDMA transmitter/receiver will be briefly described hereinafter on the assumption that a base station controls the up-going transmission power of a mobile station on the basis of ~~receipt~~reception quality from the mobile station. So long as a base station constantly receives up-going radio frames from a mobile station, the former can stably control the transmission power of the latter. However, when a building, for example, shades the mobile station, it is likely that the signal level on the effective path, which the base station has grasped, is lowered and sharply lowers

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~~receipt~~reception quality although the up-going path may remain in synchronism. In such a case, the base station sends to the mobile station a transmission power control command for causing the mobile station to raise up-going transmission power. In response, the mobile station sharply raises its up-going transmission power.

Please replace the paragraph beginning at page 2, line 8, with the following rewritten paragraph:

Assume that the transmission power of a certain mobile station sharply increases when the base station is communicating with a plurality of mobile stations at the same time. Then, the sharp rise of the transmission power influences signals being received by the other mobile stations in the same manner as an increase in an interference wave. This prevents the number of mobile stations connectable to the base station at the same time from satisfying a capacity that depends on the system and thereby causes the CDMA communication system to fail. A scheme capable of preventing the up-going power from sharply increasing as a result of the temporary deterioration of up-going ~~receipt~~reception quality has not been reported in the past.

Please replace the paragraph beginning at page 3, line 2, with the following rewritten paragraph:

It is an object of the present invention to provide a CDMA transmitter/receiver capable of controlling, when

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receipt quality from another station is sharply lowered, ~~controlling an increase in the transmission power of the above station for station,~~ thereby preventing a subscriber capacity from decreasing.

Please replace the paragraph beginning at page 4, line 17, with the following rewritten paragraph:

To better understand the present invention, brief reference will be made to a specific conventional CDMA transmitter/receiver, shown in FIG. 1. The following description will concentrate on control over the up-going transmission power of a mobile station, which a base station executes on the basis of up-going ~~receipt~~ reception quality from the mobile station. Of course, the mobile station may control the down-going transmission power of the base station if the relation between the up-going and down-going channels and the relation between the base station and the mobile station are inverted.

Please replace the paragraph beginning at page 5, line 6, with the following rewritten paragraph:

The RF receiver 1 executes band limitation, frequency conversion and other processing with a received radio signal for thereby converting the radio signal to a baseband signal. The baseband signal is input to the searcher 2 and finger 3. The searcher 2 ~~searches for,~~ searches, based on the input baseband signal, for the time of receipt ~~timing~~ of an effective path between the

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base station and a mobile station sending the signal and feeds the time of receipt ~~timing~~ to the finger 3. At the ~~receive timing~~ input of time of receipt from the searcher 2, the finger 3 executes inverse spreading with the received baseband signal by using a preselected inverse spread signal. The finger 3 then executes detection and rake processing with the inversely spread baseband signal and delivers the resulting signal to the decoder 4. The decoder 4 ~~deinterleaves~~ de-interleaves the signal output from the finger 3 and then executes error correction coding, CRC (Cyclic Redundancy Check) and other decode processing to thereby output a received data sequence.

Please replace the paragraph beginning at page 5, line 19, with the following rewritten paragraph:

The coder 5 executes CRC coding and error correction coding with a data sequence to be sent and then interleaves the data sequence to thereby generate a radio frame. Subsequently, the coder 5 spreads the radio frame by preselected spread ~~coding for coding,~~ thereby producing a baseband signal to be ~~sent~~ sent, and feeds the baseband signal to the RF transmitter 6. The RF transmitter 6 transforms the input baseband signal to a radio signal to be sent and radiates the radio signal via an antenna ~~not shown~~ (not shown).

Please replace the paragraph beginning at page 7, line 1, with the following rewritten paragraph:

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The mobile station controls transmission power in accordance with the up-command or the down-command included in the received, down-going radio frame. More specifically, the transmission power of the mobile station is raised if the ~~receipt~~reception quality of the mobile station is low. As soon as expected ~~receipt~~reception quality is restored, the transmission power is again lowered.